

WHAT IS CLAIMED IS:

1. A method of manufacturing or handling a substantially pure object,
comprising:

5 shielding the substantially pure object from the environment by substantially
enveloping it in a fluid.

2. The method of Claim 1, further comprising:
molding the object in a mold; and
10 removing the object from the mold.

3. The method of Claim 2 wherein the shielding step occurs at least during
removal of the object from the mold.

15 4. The method of Claim 1 wherein object is a medical container or a
component of a medical container.

5. The method of Claim 1 wherein the fluid is a gas.

20 6. The method of Claim 5 wherein the gas is air, filtered air, conditioned air
or deionized air.

7. The method of Claim 1 wherein the fluid comprises at least one sterilizing
agent.

25 8. The method of Claim 1 wherein the shielding step occurs at least while the
object is still in the mold.

9. The method of Claim 2 wherein the removing step is conducted by a
30 machine.

10. The method of Claim 9 wherein the machine is a robotic machine.
11. The method of Claim 9 wherein the mold comprises an ejector mounted therein.
- 5 12. The method of Claim 2 wherein the removing step is conducted using a low starting speed.
- 10 13. The method of Claim 2 wherein the removing step is conducted before object cooling is complete.
14. The method of Claim 9 wherein the machine comprises at least one nozzle through which fluid is conveyed to substantially envelope the object.
- 15 15. The method of Claim 2 wherein the mold comprises at least one nozzle through which fluid is conveyed to substantially envelope the object.
16. The method of Claim 2 wherein the mold exhibits a surface that is treated to exhibit a minimum adhesive force.
- 20 17. The method of Claim 1 wherein the shielding step further comprises substantially surrounding the object with a housing.
18. The method of Claim 17 wherein the housing is substantially bell shaped.
- 25 19. The method of Claim 2, further comprising:
conducting a further processing function on the object.
20. The method of Claim 19 wherein the further processing function
30 comprises siliconizing the object.

21. The method of Claim 2 wherein the object is substantially enveloped by a fluid during subsequent handling and/or processing steps.

22. The method of Claim 3 wherein the shielding step further operates to cool
5 the object.

23. The method of Claim 22 wherein the cooling effect is fast-cooling or slow-cooling.

10 24. The method of Claim 1, further comprising:
assembling one or more components with the object.

25. The method of Claim 1 wherein the object is a syringe barrel.

15 26. The method of Claim 2 wherein the mold is disposed with a room not exceeding Class 100,000 conditions.

27. The method of Claim 2, further comprising:
siliconizing the object;
20 inspecting the object; and
packaging the object.

28. The method of Claim 1 wherein the fluid is adapted to influence the surface characteristics of the object.

25 29. The method of Claim 28 wherein the fluid hardens or dries a surface coating of the object.

30 30. The method of Claim 9 wherein the machine comprises a handling device
for handling the object.

31. The method of Claim 30 wherein the handling device comprises at least one nozzle for discharging the fluid.

32. The method of Claim 30 wherein the handling device comprises a pair of grippers.

33. The method of Claim 30 wherein the handling device comprises a housing for substantially surrounding the object.

34. A method of manufacturing a substantially pure object, consisting essentially of:
molding the object without the need for one or more subsequent cleaning steps.

35. The method of Claim 34 wherein the one or more subsequent cleaning steps comprises air or water cleaning steps.

36. The method of Claim 34 wherein the object comprises a syringe barrel.

37. A method of manufacturing a substantially pure object, consisting essentially of:
molding the object with a molding machine located in a room not exceeding Class 1000 conditions.

38. A system for manufacturing a substantially pure object, comprising a mold for forming the object; and
a machine adapted to remove the object from the mold, the machine comprising a handling device for gripping the object and removing it from the mold, the handling device comprising at least one nozzle through which fluid is delivered to substantially envelope the object during removal of the object from the mold.

39. The system of Claim 38 wherein the handling device forms a housing for substantially surrounding the object.

40. The system of Claim 39 wherein the housing is substantially bell shaped.

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41. The system of Claim 38 wherein the at least one nozzle comprises a plurality of nozzles.

42. The system of Claim 38, further comprising a source of fluid connected to
10 the at least one nozzle.

43. The system of Claim 42, further comprising a filter associated with the fluid source.

15 44. The system of Claim 38 wherein the machine comprises a robotic arm and the handling device is positioned on the robotic arm.

45. The system of Claim 38 wherein the mold comprises a movable platen and a stationary platen.

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46. A method of manufacturing an object, comprising:
removing the object from a mold in a generally soft or semi-molten state; and
substantially enveloping the object in a fluid to cool the object.

25 47. The method of Claim 46 wherein the enveloping step is adapted to reduce cooling stresses in the object.